REMARKS

Claims 1, 12, 14 and 15, all the claims pending in the application, stand rejected. The Examiner has considered Applicants' arguments filed in the Response dated February 3, 2005, and found them persuasive. The Examiner has withdrawn the previous rejection based upon Suzuki (6,108,586) and has substituted a new ground of rejection based upon the patent to Lee (6,052,652), which was previously cited and distinguished in the Preliminary Amendment filed on December 31, 2003. On the basis of the following remarks, all of the claims should be considered patentable.

Claim Rejections - 35 U.S.C. § 102

Claims 1, 12, 14 and 15 are rejected under 35 U.S.C. § 102(b) as being anticipated by Lee (6,052,652). This rejection is traversed for at least the following reasons.

First, the comments previously made in the Preliminary Amendment are incorporated herein by reference as they clearly distinguish Lee from the original claims. Moreover, the claims are patentable for at least the following reasons.

Claim 1

The invention defined by claim 1 concerns a design support apparatus which has at least four specific units, (1) an input reception unit, (2) a strength calculation unit, (3) a stress calculation unit and (4) a comparison report unit.

The claim specifies that the **input reception unit** receives an input comprising a parameter name of a product to be designed and a parameter value associated with the parameter name. As explained beginning at page 16, line 15 of the present application, a definition attribute dictionary unit 202 stores a name of a definition attribute, a parameter name relating to the definition attribute and a remark about whether the parameter name represents a control attribute or a stress attribute in association with each other. From this description of a "parameter name" and the examples provided at page 16, lines 19-24, a textual name such as "polyamide bearing" serves as such "parameter name of a product."

In the flowchart of Fig. 7, a variety of names, including attribute (step 701), parameter (step 702), strength (step 703) and stress (step 704) are input, as described beginning at page 20, line 1. As explained at page 20, line 21, the **input reception unit 206** will prompt a designer or a CAD/CAM system to input the parameter values of the parameter names. Thus, as explained at page 22, line 13, the **input reception unit 206** receives inputs of values of the obtained parameters of the control attributes and values of the obtained parameters of stress attributes. At Step S707, the inputs are of values associated with the parameter names.

Given this understanding of the terms "parameter name" and "parameter value" associated with the parameter name, it is clear that Lee does not have such feature.

The claim further requires the **strength calculation unit** to calculate strength values of the product to be designed using the parameter name and the parameter value. Again, it will be demonstrated that Lee does not have such strength calculation feature which depends upon a parameter name and parameter value. This calculation is described at page 23 for the strength calculation unit 212, with reference to Step S708 of Fig. 7.

Similarly, the claimed **stress calculation unit** calculates a value of stress which is applied to the product to be designed using the parameter name and the parameter value. There is no such stress calculation feature in Lee. This calculation is described at page 23 for the stress calculation unit 213, with reference to Step S709 of Fig. 7.

Finally, the claimed comparison report unit has the function of comparing (1) the calculated strength value and (2) the calculated stress value, both of which are calculated using the parameter name and the associated parameter value.

Claim 12

Independent claim 12 is directed to a design support method which has at least four steps including an input step, a strength calculating step, a stress calculating step and a comparison reporting step. Notably, each of the input receiving step, strength calculating step and stress calculating step relies upon an input of a parameter name of a product to be designed and a parameter value associated with the parameter name, as in claim 1.

3

Lee

The technique disclosed by Lee is for computing stress values for a group of elements of a structure based on an actual load and stress distribution ratio, and then computing a "required strength" based on the computed strength value.

The Examiner asserts that system disclosed in Lee includes the claimed input reception unit, strength calculation unit, stress calculation unit and comparison report unit. Apparently, as disclosure of the claimed **input unit**, the Examiner makes specific reference to the teaching at col. 2, lines 17-20. The text at that portion of the specification states:

> "To achieve the above objects, there is provided an apparatus using a method for analyzing the strength of the structure which includes an input unit for receiving a data for analyzing a strength of a structure,...."

Notably, nothing in this teaching concerns the use of a parameter name or a parameter value that is utilized with an input reception unit. In the absence of this limitation of the claim, there can be no anticipation. Clearly, the cited language does not support a rejection based upon anticipation.

The Examiner points to the disclosure at col. 2, lines 4-8 and 17-20 for teaching of the **strength calculation unit**. The text at lines 4-8 read as follows:

> To achieve the above objects there is provide a method for analyzing the strength of a structure, which includes the steps of a first step for grouping a concerned element of an object structure so as to compute a strength of the concerned element,...

However, as is clear from the foregoing quotation, the strength of a structure may be analyzed but the key feature is the grouping of elements among the elements of the structure under analysis. The purpose of this grouping is to overcome the problem in the prior art relating to excessive analysis and computation, as explained at col. 1, lines 47-54 and col. 1, line 63-col. 2, line 3.

Notably, nothing in this teaching concerns the use of a <u>parameter name</u> or a <u>parameter value</u> that is utilized with a strength calculation unit. Indeed, the Examiner cannot point to a separate strength calculation unit in Lee that is separate from the stress calculation unit. In the absence of this limitations of the claim, there can be no anticipation. Clearly, the cited language does not support a rejection based upon anticipation.

Next, the Examiner points to the teachings at col. 2, lines 8-12 and 22-24 for a disclosure of a **stress calculation unit** that calculates a value of a stress. Again, a careful review of the text at lines 8-12 shows that there is no such calculation based upon <u>parameter name</u> and <u>parameter value.</u> The text at col. 2, lines 4-16 read as follows:

> "To achieve the above objects there is provide a method for analyzing the strength of a structure, which includes the steps of a first step for grouping a concerned element of an object structure so as to compute a strength of the concerned element, a second step for setting a unit load value and <u>computing a stress value</u> of the concerned element, a third step for changing the stress value corresponding to the unit load value into a related function with respect to the entire elements, of four steps of <u>computing a stress</u> based on an actual load value based on the related function and an actual load value, and a fifth step for analyzing a strength of a corresponding structure based on the stress based on the actual load value."

The text at lines 22-24 is similarly unavailing.

Finally, the Examiner points to the teachings at cols. 1 and 2, lines 63-67 and 1-3 for a teaching of a **comparison report unit** that is alleged to compare the calculated strength value with the calculated stress value. The cited text in Lee does not provide any teaching of a comparison of calculated strength with calculated stress. The text reads:

> "Here is another object of the present invention to provide an improved method for analyzing the strength of a structure and an apparatus using the same which are capable of more simply and accurately computing the stress of each element of the structure by selectively grouping the elements of the structure,

which are judged to receive a lot stress, and analyzing the stresses of the grouped

elements with respect to the entire structures."

Indeed, the Examiner cannot point to a comparison in Lee that depends on a calculated

strength and a calculated stress. In the absence of this limitation the claim, there can be no

anticipation. Clearly, the cited language does not support a rejection based upon anticipation.

Applicants respectfully note that all of the quotations cited by the Examiner come from

the Summary of the Invention. These quotations simply provide a broad overview of the subject

matter of Lee. Nonetheless, even if the detailed disclosure is examined, it is clear that the focus

of Lee is on simplifying a stress calculation process by grouping elements together. It appears

that the Examiner has not made reference to the detailed description because id does not support

the Examiner, but instead, supports Applicants' conclusions.

For example, at col. 3, line 33, the operation of an apparatus for analyzing the strength of

the structure is explained.

In a first step, an element is selected from among the elements of the structure and is used

for determining the entire strength of the structure. A stress which is applied to a predetermined

concerned element is identified as a "concerned stress". Such stresses are grouped so that the

analysis may be conducted on only one of the elements in the group.

Notably, the structures of exemplary object, an elevator or cage, are referred to be

reference characters P0-P7. However, there is no parameter name of a product connected with

this designation.

Applicants note that the patent teaches at col. 3, lines 56-57 that a user input axial-values

of the elements P0-P7 using an input unit 1. Further, in a subsequent step, a user inputs 9 unit

loads ul0-ul8 with respect to 8 stresses CS0-CS7 grouped by the input unit 1, as explained at col.

4, lines 8-11.

The calculation process described in Lee has several steps. In the first step, the value of a

load of a first unit is set to 1 while the value of the remaining unit loads is set to 0. In a next

step, the value of the first unit load ul1 is set to 1 and the value of the remaining unit loads are all

set to 0, thus forming a vector UL. In subsequent steps, the value of the i-th unit load is set to 1 and resulting values are obtained and stored. The steps are performed as many time as the number of unit loads.

Notably, there is no strength calculation in the manner claimed. While the Examiner may be able to argue that a stress calculation is performed, the overall combination of units and functions set forth in the claims cannot be found in Lee. As explained at col. 6, lines 6-15,

> As described above, in the present invention, the related function of each element of a structure, namely, the stress between the elements of the structure, is computed, so that it is possible to more simply compute an actual stress CSA of entire elements based on the related function, and it is possible to analyze the strength of the structure based on the actual stress CSA. Therefore it is possible to significantly reduce time consumption and manpower by reducing the use of an analyzing program such as an FEM solver.

Given the absence of a strength calculation unit and a stress calculation unit as claimed, there also can be no comparison report unit that compares a calculated strength value with a calculated stress value. The Examiner makes reference to cols. 1 and 2 for support, but this text does not support his conclusion. Further, the Examiner's reference to col. 3, lines 17-31 has no teaching of any comparison between a calculated strength value with a calculated stress value. The teaching is simply of the change stress value.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Response Under 37 C.F.R. § 1.111
U.S. Application No. 10/748,189

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.
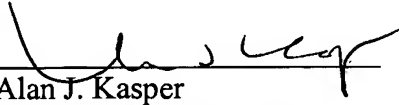
Respectfully submitted,

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Alan J. Kasper
Registration No. 25,426

Date: August 26, 2005

8